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(54) FENCING OF EXCAVATIONS

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Temporary fencing for excavations - has rails retained in slotted posts
which rest in sockets of base plates
N WEST ELEC BOARD 03.05.73-GB-021068
Q46 (11.08.76) E04h-17/18

The temporary fencing structure for excavations has a number of upright hollow posts, each post being mounted in a socket in a base plate. Each post has a number of slots for receiving the ends of horizontal rails, the rail ends being retained in the slots by elements within the posts. The retainer elements pass through apertures in structures having walls made of a synthetic plastics material, the rails being internally braced by cross webs. Each base plate is made from steel and has a rectangular plate part on which the socket is defined by four walls, 24.4.74 (4pp).

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10 formed, to be pa
by the following
This invention
cavations.

Excavations have frequently to be made
15 in such places as public highways and
footpaths by public utility under-takings
such as gas, electricity and water supply
authorities, and telephone undertakings for
the purpose of extension, repair to, or
20 modification of service lines.

It is both a common law and statutory
duty to provide means for warning users of
the highway of the presence of the ex-
cavation. Such precautions are necessary at
25 all times.

The Department of the Environment,
acting under powers conferred on them by
the Highways Act 1959 as amended by
Section 37 of the Highways Act 1971, have
30 made draft recommendations for the
guidance of undertakers and included in
these a recommendation that barriers used
to delineate road works should be "portable,
stable under adverse weather conditions and
35 appear substantial but in fact not be so
substantial as to cause excessive damage to
a vehicle should they be struck."

An object of the invention is to provide
means for fencing excavations which will:—

40 (a) comply with the draft recom-
mendations of the Department of the
Environment;

(b) incorporate a minimum number of
components to form a modular system;

45 (c) be light and easily transportable from
place to place.

The invention accordingly provides a
demountable fencing structure comprising a

extending through a respective aperture in
the respective rail end.

The posts and rail members are preferably
hollow-sectioned structures each having
65 walls made from polyvinylchloride or other
suitable synthetic plastics material. They
may, however, be internally braced by
across-webs of the same material. The post
and rail members may be made by moulding
70 or may be extrusions.

The base plates may be made from steel
and may each comprise a substantially
rectangular plate part to rest on the ground,
the socket being integral therewith and
having an internal shape and dimensions
75 complementary to the corresponding ex-
ternal shape and dimensions of a post.

The socket may be provided by walls
extending substantially perpendicularly to
the plane of the base plate, and two opposite
walls of said socket may have aligned
apertures therein to enable a pin, which may
be secured to the base plate by a chain, to be
80 inserted into said apertures and
corresponding apertures in the foot of a
post.

The retainer elements within the posts
may be respective pins which may be
chained to their posts.
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Each post may have a bracket at its upper
end for mounting an electrically-op rated
warning lamp.

The posts and rail members may be
coloured white and there may be
95 stripes of red on the rail members

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may be plain or fluorescent and the white plain or reflective.

An embodiment of the invention will now be more particularly described, by way of example only, with reference to the accompanying drawings, wherein:—

Fig. 1 is a perspective view of part of an erected fencing structure according to the invention;

Fig. 2 is an enlarged perspective view of the top of one of the posts of the fencing structure of Fig. 1; and

Fig. 3 is an enlarged perspective illustrating one end of one of the rail members of the fencing structure of Fig. 1.

In the illustrated embodiment, a demountable fencing structure, for fencing excavations, comprises a plurality of upright posts 10, a plurality of rail members 11 and a plurality of base plates 12.

Each rail member 11 is of rectangular cross-section, typically 150 mm by 20 mm, and is formed of walls enclosing a hollow space internally partitioned longitudinally by partitions 11a at 30 mm intervals. The rail members 11 may be provided typically in 3.0 metre, 2.0 metre and 1.2 metre lengths. The rail members 11 are extruded from white polyvinyl chloride and provided with strips or patches 13 of red luminescent or fluorescent colouring, by means of an adhesive tape wound about the rail member 11.

Each end of each rail member 11 is provided, at about 20 mm from each of its ends, with apertures 14 in its top and bottom walls, and aligned apertures 15 in the adjacent partitions 11a.

Each post 10 is of hollow square cross-section, typically 80 mm by 80 mm, and is about one metre in height, being extruded from white polyvinyl chloride. At the lower end, the post 10 is provided in two opposite sides thereof with aligned apertures 16 typically of 14 mm diameter, 25 mm from the end.

At the top end of each post 10, a bracket 17 of mild steel plate is secured thereto by a respective nut 18 and bolt 19. Each bracket 17 has a collar 20 which fits around the respective post 10 and a plate 21 which extends above the top of the post and has an aperture 22 therein to receive, for example a securing bolt (not shown) to secure a lamp 23 to the post 10. In each side, each post is provided two slots 24 measuring typically 150 mm by 21 mm for receiving the ends of respective rail members 11.

Chained to the bolt 19 securing each bracket 17 to its respective post 10 are two retainer elements in the form of pins 25 which are accommodated in their respective posts and can be inserted into the apertures 14, in the respective rail members 11. These pins enable the rail members 11 to be secured against pulling out from the

respective slots 24 in the posts 10.

The base plate 12 each comprise a substantially rectangular base portion 26, typically measuring 38 cm by 38 cm and with apertures 27 for spikes 28 to secure the plate 12 to the ground at opposite corners thereof. At the centre of the base portion 26, four upwardly projecting walls 29 provide a square socket 30, typically of 81 mm internal dimensions in order to accommodate the lower end of a respective post 10. Two opposite ones of the walls 29 are provided with aligned apertures 31 typically at a length of 25 mm from the base of the socket. These apertures 31 are arranged to be aligned with the apertures 16 in the bottom end of the post 10, so that a pin 32, chained to the base, can be inserted therein to secure the post 10 into the base 12.

A fencing structure as described above, used as a fence around an excavation, will delineate the excavation in the manner recommended.

The posts 10 and rail members 11 can be made from materials other than polyvinyl chloride, and any other synthetic plastics material, including glass reinforced plastics, can be used.

WHAT WE CLAIM IS:—

1. A demountable fencing structure comprising a plurality of upright hollow posts each accommodated by its lower end in a respective socket upstanding from a respective base plate supported on the ground, each said post having therein a plurality of slots each for receiving an end of a substantially horizontal rail member, and a plurality of rail members of which at least one extends between each adjacent pair of the posts, said rail members projecting their ends into respective said slots in the posts and being retained by retainer elements accommodated within the posts and each extending through a respective aperture in the respective rail end.

2. A fencing structure as claimed in Claim 1 wherein said posts and rail members are hollow-sectioned structures having walls made from a synthetic plastics material.

3. A fencing structure as claimed in Claim 2 wherein said rail members are internally braced by cross-webs of the same material as the walls.

4. A fencing structure as claimed in Claim 1, 2 or 3 wherein the base plates are each made from steel and each comprise a substantially rectangular plate part to rest on the ground, the socket being defined by upwardly extending walls and having an internal shape and dimensions complementary to the corresponding external shape and dimensions of a post.

5. A fencing structure as claimed in any preceding claim wherein the retainer

elements are in the form of pins chained to the respective posts.

6. A fencing structure as claimed in any preceding claim wherein each said posts are secured to its base plate by means of a pin members inserted into aligned apertures in said post and its socket.

7. A fencing structure as claimed in any preceding claim wherein one or more of the posts is provided with a bracket at its upper end for mounting a warning lamp.

8. A demountable fencing structure

substantially as hereinbefore described, with reference to and as illustrated in the accompanying drawings.

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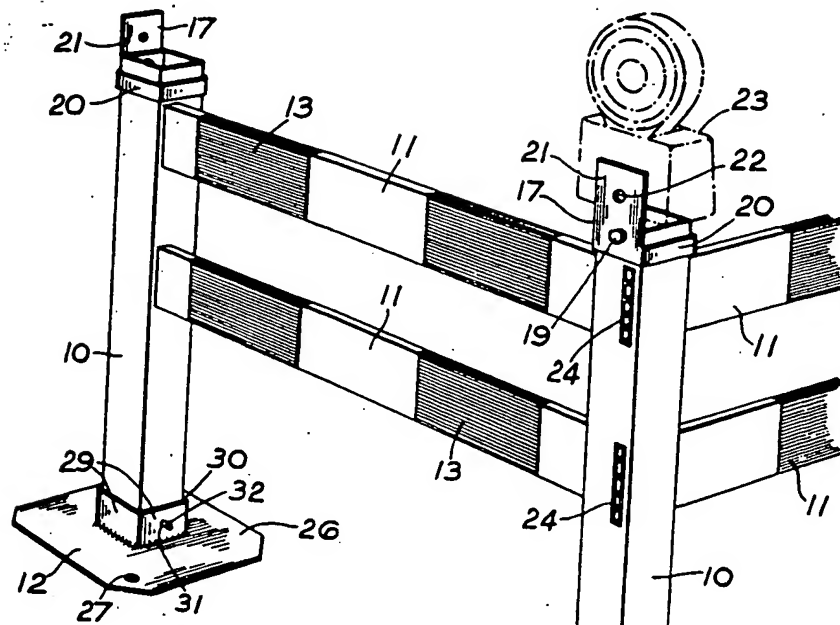


Fig. 1.

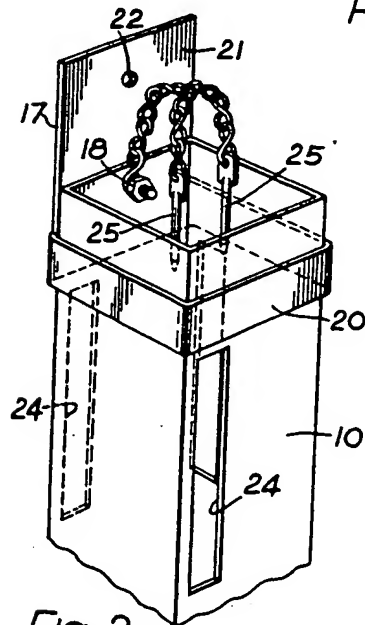


Fig. 2.

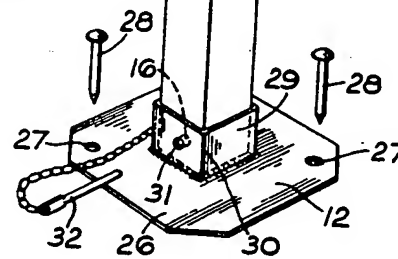


Fig. 3.